

# ANDREIA FONSECA DE FARIA

University of Campinas (Unicamp)  
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## Research Interests

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- Synthesis and characterization of nanoparticles and nanocomposites
- Biological properties of nanomaterials
- Environmental applications and implications of nanomaterials
- Production and chemical characterization of biosurfactants
- Production of bioproducts from agroindustrial wastes

## Education

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**2005-2010** Ph.D. in Food Science – University of Campinas - UNICAMP (Brazil).

Thesis title: Production, Optimization and Chemical Characterization of Biosurfactants produced by *Bacillus subtilis* in Raw Glycerol obtained from Brazilian Biodiesel Industries.

Advisor: Prof. Lucia Regina Durrant, D.Sc.

**GPA: 4.0/4.0**

**2000–2005** Bachelor's Degree in Chemistry by Federal University of Viçosa – UFV (Brazil).

Academic project: Production of Biosurfactants by *Bacillus subtilis* BBMA in a Culture Medium supplemented with Iron.

Advisor: Prof. Marcos Rogério Tótola, D.Sc.

**GPA: 8.4/10.0.**

## Relevant Coursework

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Topics in Molecular Biology, Chemistry of Surfaces and Colloids, Experimental Design and Process Optimization, Treatment of Waste Water: Processes and Systems, Food Biochemistry, Soil Microbiology, Environmental Microbiology, Environmental Monitoring, Elementar Soil Science, Chromatography Techniques.

## Professional Experience

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**2011–Present: Institute of Chemistry, University of Campinas - Campinas-SP, Brazil.**

Position: Postdoctoral Researcher.

Project: Nanocomposites based in Graphene Oxide and Their Biological Properties.

Advisor: Prof. Oswaldo Luiz Alves, D.Sc.

## Referees (2011 - present)

- Process Biochemistry
- Bioresource Technology
- Journal of Applied Microbiology

## Publications

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- T.M. Lima, A.F. Faria, B.A. Leão, A.H. Mounteer, M.R. Tótola, A.C. Borges. Oil Recovery From Fuel Oil Storage Tank Sludge Using Biosurfactants. doi:10.4172/2155-6199.1000125. Journal and Biodegradation and Bioremediation, 2:1-5, 2011.
- A.F. Faria, D. Stéfani, G.N.O. Barbosa, B.G. Vaz and I.S. Silva, J.S. Garcia, M.R. Tótola, M.N. Eberlin, M. Grossman, O.L. Alves, L.R. Durrant. Production and Structural Characterization of Surfactin (C14/Leu7) produced by *Bacillus subtilis* Isolate LSFM-05 grown on Raw Glycerol from the Biodiesel Industry. doi:10.1016/j.procbio.2011.07.001. Process Biochemistry, 46:1951-1957, 2011.
- A.F. Faria, D. Stéfani, B.G. Vaz and I.S. Silva, J.S. Garcia, M.N. Eberlin, M. Grossman, O.L. Alves, L.R. Durrant. Purification and Structural Characterization of Fengycin Homologues produced by *Bacillus subtilis* LSFM-05 grown on Raw Glycerol. doi:10.1007/s10295-011-0980-1 Journal of Industrial Microbiology and Biotechnology, 38:1951-1957, 2011.
- I. S. Silva, C. R. Menezes, A.F. de Faria, and J. G. Costa, S. Pepper, M. Britz, L. R. Durrant Application of Molecular Fingerprinting of a PAH-contaminated growing in the Presence of Complex PAHs. doi:10.4025/actascibiolsci.v32i1.7575, Acta Scientiarum.Biological Sciences, 32:63-69, 2010.
- R. C. Menezes, S. I. Silva, C. E. Pavarina, F.A. de Faria, E. Franciscon, R. L. Durrant. Production of Xylooligosaccharides from Enzymatic Hydrolysis of Xylan by White-Rot Fungi *Pleurotus*. doi:10.4025/actascitechnol.v32i1.7648, Acta Scientiarum.Technology, 32:37-42, 2010.

- I.S. Silva, E.C. Santos, C. R. Menezes, A.F. de Faria, E. Franciscan, M. Grossman, L. R. Durrant. Bioremediation of a Polyaromatic Hydrocarbon contaminated Soil by a Native Soil Microbiota and Bioaugmentation with Isolated Microbial Consortia. doi:10.1016/j.biortech.2009.03.079. Bioresource Technology, 100:4669-4675, 2009.
- Unveiling the Role of Oxidation Debris on the Surface Chemistry of Graphene through the Anchoring of Ag Nanoparticles (2012), Author(s): Faria, Andréia; Moraes, Ana; Martinez, Diego Stéfani; Paula, Amauri; Souza Filho, Antonio; Alves, Oswaldo. Periodic: Journal of the American Chemical Society (submitted).
- Composites based on Graphene Oxide and Silver Nanoparticles inhibits *Pseudomonas aeruginosa* Adhesion on Stainless Steel Surfaces: New Approach to Control the Biofilm Formation (2012). Andreia F de Faria, Diego ST Martinez, Stela MM Meira, Nadia F Andrade, Ana M de Moraes, Adriano Brandelli, Antonio GS Filho, Oswaldo L. Alves (in preparation).

## Grants and Projects

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**April-September 2011** - Biological Properties of Nanocomposites formed from Graphene Oxide and Silver Nanoparticles.

Supervision: Prof. Oswaldo Luiz Alves (Institute of Chemistry - Unicamp).

Position: Postdoctoral Researcher from National Institute of Science and Technology in Complex and Functional Materials (INOMAT).

Grants: National Council for Scientific and Technological Development – CNPq (Brazilian Government Agency).

Process:150373/2011-2.

**October 2011- March 2012** - Removal of Debris Oxidation from Graphene Oxide: Implications on the Nanocomposites Formation.

Supervision: Prof. Oswaldo Luiz Alves.

Position: Postdoctoral Researcher – INOMAT.

Grants: National Council of Science and Development (CNPq).

Process: 152663/2011-8.

**March 2012 - August 2012** - Preparation and Characterization of Polymeric Nanocomposites.

Supervision: Prof. Oswaldo Luiz Alves.

Position: Postdoctoral Researcher – INOMAT.

Grants: National Council of Science and Development (CNPq).

Process: 150346/2012-3.

**2005-2010** - Production, Optimization and Chemical Characterization of Biosurfactants produced by *Bacillus subtilis* in Raw Glycerol obtained from Brazilian Biodiesel Industries.

Supervision: Prof. Lucia Regina Durrant (Department of Food Science - Unicamp).

Position: Ph.D. student.

Grants: National Council for Scientific and Technological Development (CNPq).

Process: 141418/2005-2.

**2003-2004** Environmental and Oil Microbiology: Biosurfactants Production, Bioremediation and Enhanced Oil Recovery.

Supervision: Prof. Marcos Rogério Tótola (Microbiology Department, Federal University of Viçosa).

Position: Scientific Initiation Student.

Grants: National Council for Scientific and Technological Development (CNPq).

## Awards and Honors

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**2010** Approval on public concourse of exams and titles to position of associate professor to the Food Science Department at Federal University of Santa Catarina - UFSC, Campus Florianópolis - Brazil.

**2009** Best work presented on the XVI Brazilian Congress of Toxicology: *Ecotoxicity of Carbon Nanotubes using Daphnia similis model: Influence of the Biosurfactant as dispersant agent*, Belo Horizonte, Minas Gerais, Brazil.

## Talks

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Application of Biosurfactants in Remediation of Oil Contaminated Environments, Federal Institute for Education, Science and Technology Southern of Minas Gerais - Campus Inconfidentes, Brazil, 2007.

Biosurfactants and their Industrial Applications, State University of Minas Gerais, Divinópolis, Brazil, 2006.

## Organizing Committees

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**2005** International Workshop on Environmental Microbiology: Opportunities in the South America, Unicamp-SP, Campinas, Brazil.

## Participation in Boards

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### Ph.D. Exam

- Luana Pereira de Moraes: Production and Optimization of  $\gamma$ -Polyglutamic acid by *Bacillus velezensis* in Medium supplemented with Glycerol and Molasses, Faculty of Food Engineering, Unicamp, 2012.

### Master Exams

- Sheila de Oliveira: Bioconversion and Biodegradation of *D*-Limoneno by Microorganisms Consortia, Department of Chemical Engineering, Unicamp, 2012.
- Meire Brum Lima: Production of Phytase by *Aspergillus* using Solid State Fermentation: Influence of Mineral Salts and Nitrogen Source, Faculty of Food Engineering, Unicamp, 2012.
- Fernanda Franzoni Pescumo: Degradation of Polyaromatic and Dye Compounds by Archeas and Halophilic Bacteria, Department of Food Science, Unicamp, 2011.
- Sylvia Carolina Alcázar Alay: Production and Optimization of Lactic Acid by *Lactobacillus delbrueckii* spp. *bulgaricus* in Medium containing Cane Molasses, Faculty of Food Engineering, Unicamp, 2011.

## Event Participation

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Workshop of National Institute of Science and Technology in Complex and Functional Materials (INOMAT), Campinas, Brazil, 2012.

Workshop of Physics of Graphene, Institute of Physics, University of Campinas, SP, Brazil, 2011.

Biosurfactant from *Bacillus subtilis* as a Stabilizing Agent for Carbon Nanotubes Ecotoxicity Studies, Stéfani, D; Faria, A.F; Souza Filho, A.G; Almeida, G; Vaz, B.G; Eberlin, M.N; Durrant, L.R; Umbuzeiro, G.A; Alves, O.L, Nanotoxicology, Edinburgh Meeting Programme and Abstracts, Edinburgh, Scotland, 2010.

Ecotoxicity of Carbon Nanotubes using *Daphnia similis* model: Influence of the Biosurfactant as dispersant agent, Stéfani, D; Faria, A.F; Souza Filho, A.G; Almeida, G; Caloto-Oliveira, A; Durrant, L.R; Umbuzeiro, G.A; Alves, O.L, XVI Brazilian Congress of Nanotoxicology-Brazilian Society of Toxicology, Belo Horizonte, Brazil, 2009.

Monitoring the Performance of Consortia and Co-Culture in the Bioaugmentation of a PAHs-Contaminated Soil Microcosm, Silva, I.S; Faria, A.F; Santos, E.C; Dias, F.G; Durrant, L.R, Second Brazilian Symposium on Petroleum Biotechnology, Natal, RN, Brazil, 2006.

Perspectives of Application of an Extremophilic and Halophilic Microorganism in Biotechnology, Faria, A.F; Silva, I.S; Bonfá, M; Durrant, L.R, Second Brazilian Symposium on Petroleum Biotechnology, Natal, RN, Brazil, 2006.

Production of Biosurfactants for *Bacillus subtilis* BBMA 155 in Medium supplemented with Iron, Faria, A. F; Vieira, N. M; Lima, T.M.S; Borges; A. C; Tótola, M. R, WIMA-International Workshop of Environmental Microbiology, Campinas, SP, Brazil, 2005.

Production of Bacterial Biosurfactants from Oily Compounds, Climaco, R. C; Faria, A.F; Lima, T.M; Borges, A. C; Tótola, M. R, International Workshop of Environmental Microbiology, Campinas, SP, Brazil, 2005.

Production of Biosurfactants by Microorganisms Isolated from Environments Contaminated with Oil and Hydrophobic Substrates, Lima, T; Tótola, M.R; Faria, A.F, XIII Brazilian Congress of Chemistry, Ouro Preto, MG, Brazil, 2003.

Influence of the Iron Concentration in the Production of Surfactin by *Bacillus subtilis*, Brito, G.M; Faria, F.A; Lima, T.M, Tótola, M.R, XIII Symposium of Scientific Initiation, Viçosa, MG, Brazil, 2003.

Determination the Total Protein and Identification of Heat Shock Protein (HSP) from the Livers of Commercial Chicken submitted to Thermal Stress, Aguiar, C.C; Faria, F.A; Baracat Pereira, M.C, XI Symposium of Scientific Initiation, Viçosa, MG, Brazil, 2002.

## Academic Activities - Teaching Assistance

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**2009** - Teaching Assistance of “Microbiology and Fermentations”, Department of Food Science. In this modality the Ph.D. student is responsible for all theoretic and practical content. Grant from UNICAMP Foundation.

**2008** - Teaching Assistance of “Food Microbiology”, Department of Food Science. Grant from UNICAMP Foundation.

**2006 - 2007** Teaching Assistance of “Microbiology and Fermentations”, Department of Food Science. Grant from UNICAMP Foundation.

**2004** Teaching Assistance of “Fundamentals in Organic Chemistry”, Department of Chemistry, UFV. Grant from Arthur Bernardes Foundation at UFV.

## Languages

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**Portuguese** – native.

**English** – excellent reading, intermediate comprehension and writing.

**Spanish**– excellent reading, intermediate comprehension.

## References

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- Prof. Marcos Rogério Tótola, Microbiology Department, Laboratory of Environmental Biotechnology and Biodiversity, Federal University of Viçosa, Tel +55 (31) 3899-2903, Email: totola@ufv.br
- Prof. Lucia Regina Durrant, Food Science Department, Laboratory of Microbial Systematic and Physiology, University of Campinas, Tel +55 (19) 3521-2173 or +(55) 3521-2172, Email: durrant@fea.unicamp.br or durrantclean@gmail.com
- Prof. Oswaldo Luiz Alves, Institute of Chemistry, Solid State Chemistry Laboratory, University of Campinas, Tel +55 (19) 3521-3147, Email: oalves@iqm.unicamp.br
- Prof. Nelson Eduardo Durán Caballero, Institute of Chemistry, Laboratory of Biological Chemistry, University of Campinas, Tel + (55) 19 3521 3149, Email: duran@iqm.unicamp.br

## Contact and personal information

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Brazilian, 30 years old, married.

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Homepage: <http://ffaria.weebly.com>

Full curriculum version in <http://buscatextual.cnpq.br/buscatextual/visualizacv.do?id=K4734210H6> (partially in English).